



Concrete Batching

SIC CODE: 3273 NAICS Code: 327320

Concrete is composed essentially of water, cement, sand (fine aggregate) and coarse aggregate, and is produced at plants that store, convey, measure, mix and discharge these constituents into trucks for transport to a job site.



Concrete batching produces dusts consisting mainly of cement and other powdery solid constituents. Such dusts are regulated as an air pollutant called "particulate matter" or PM.

There are two types of PM emissions from concrete batching. Point/stack PM emission sources usually are the transfer of cement and other powdery raw material to silos that are usually vented to a fabric filter or "sock" to reduce PM emissions. Some mixers may also have baghouses/dust collectors to reduce PM emissions during truck loading.

Fugitive PM sources include the transfer of sand, aggregates and other powdery materials, truck unloading, mixer truck loading (if not controlled), vehicle traffic, and wind erosion from sand and aggregate storage piles. The amount of fugitive emissions depends primarily on the moisture content of these materials.

Commonly used controls for PM emissions may include water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, central duct collection systems including various fabric filtration dust collectors, and the like. As a major source of fugitive PM emissions, truck traffics over unpaved or dusty surfaces in and around the plants can be controlled by good maintenance practice and wetting of the road surface.

EPA AP-42, Subchapter 11.12: *Concrete Batching* provides PM emission factors commonly used for the estimation of such potential PM emissions from concrete catching plants. It can be accessed at <https://www3.epa.gov/ttn/chief/ap42/ch11/final/c11s12.pdf>.

Depending on the amount of its potential PM emissions, a concrete batching plant may be exempt from permitting or require Air Quality permits. Listed below are various cases when concrete batching plants can be exempt from permitting or appropriate permits are required based their PM emission levels and/or production capacities:

- **Case 1:** If it produces less than 125,000 tons per year of product, the plant is exempted from permitting per Georgia Rules for Air Quality Control 391-3-1-.03(6)(h)1.
- **Case 2:** Plants with product greater than 125,000 tons per year must obtain a state-issued air quality construction and operating permit (aka "SIP Permit"). If potential PM emissions are below 100 tons per year, the plant shall apply for a minor source Air Quality permit. Effective March 1, 2019, when applying for this permit, an associated permit application fee will be required.
- **Case 3:** If the plant can limit its production to 600,000 cubic yards during 12 consecutive months, Permit-by-Rule (PBR) can be issued to the plant per Georgia Rules for Air Quality Control 391-3-1-.03(11)(b)4. The PBR establishes pre-determined operational limitations for certain industrial

categories for the purposes of ensuring that a facility will not be considered a major source with respect to Title V of the Clean Air Act Amendments of 1990, Chapter 391-3-1.03(11)(b)7. PBR permits are not required to pay annual fees at this time, but are still subject to obtaining an air quality construction and operating permit. Effective March 1, 2019, when applying for the Permit-by-Rule, an associated permit application fee will be required.

- **Case 4:** If plant annual production will exceed 600,000 tons, but agrees to limit the plant-wide potential PM emissions (controlled plus uncontrolled) to less than 100 ton per year, by limiting its operating time and/or production capacity and/or using emission control system(s), the plant can apply for a Synthetic Minor Air Quality permit. A Synthetic Minor permit imposes enforceable limits to restrict a facility's potential emissions to below major source thresholds - the maximum limit of a potential pollutant that a facility can emit annually. This option makes it possible for the facility that can comply with the Synthetic Minor permit's enforceable limits to operate without the need for a Title V permit. Synthetic minor operational fees are required annually. Effective March 1, 2019, when applying for the Synthetic Minor permit, an associated permit application fee will be required.
- **Case 5:** If it required a permit to operate, the plant may request a Generic Permit per Georgia Rules for Air Quality Control 391-3-1-.03(12). Effective March 1, 2019, when applying for the Generic Permit, an associated permit application fee will be required.

PM: PM (including PM₁₀ and PM_{2.5}) stands for particulate matter (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.

Particle pollution includes:

PM₁₀: inhalable particles, with diameters that are generally 10 micrometers and smaller; and

PM_{2.5}: fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

How small is 2.5 micrometers? Think about a single hair from your head. The average human hair is about 70 micrometers in diameter – making it 30 times larger than the largest fine particle.

Applying for a Permit:

The Georgia SIP Construction & Operating Permit Application (SIP Application) is used to apply for initial air quality permits and for modifications to existing air quality permits. The application forms can be accessed at: <https://epd.georgia.gov/forms-permits/air-protection-branch-forms-permits/air-permits/apply-air-permit/apply-sip>.

- The SIP Application consists of separate forms that request information about the facility, emission units, control devices, and pollutants emitted. Each application form contains specific instructions for completion.
- The SIP Application for a Generic Permit, a Permit-by-Rule and a Synthetic Minor Permit require additional forms.

Regulatory Information

- Georgia Rules for Air Quality Control, Chapter 391-3-1, (<https://epd.georgia.gov/document/document/rules-air-quality-control-0/download>)
- Apply for an Air Quality Permit (<https://epd.georgia.gov/forms-permits/air-protection-branch-forms-permits/air-permits/apply-air-permit/apply-sip>)

Helpful Tools & Resources

- AP 42, Fifth Edition, Volume I: Chapter 11: *Mineral Products Industry*. (<https://www3.epa.gov/ttn/chief/ap42/ch11/index.html>)
- AP 42, Fifth Edition, Volume I: Subchapter 11.12: *Concrete Batching*. (<https://www3.epa.gov/ttn/chief/ap42/ch11/final/c11s12.pdf>)
- Small Business Environmental Assistance

The Georgia Small Business Environmental Assistance Program (SBEAP) is a non-regulatory program of the Georgia Environmental Protection Division. SBEAP provides free compliance assistance to help Georgia's businesses comply with state and federal air quality requirements. SBEAP also helps make referrals for issues in water quality, solid and hazardous waste management, and other environmental areas.

SBEAP can assist with potential emissions calculations as well as general permit application questions.

Primary Contact:

Sherry Waldron
Small Business Ombudsman
Email: sherry.waldron@dnr.ga.gov
Phone: 470-524-0645

(<https://epd.georgia.gov/outreach/outreach-educational-programs/small-business-environmental-assistance>)

Georgia & Regional Trade Associations

- Unified Screening & Crushing for the Mining & Aggregate Industries
- Georgia Concrete Products
- Georgia Highway Contractors Association
- Georgia Construction Aggregates Association
- Georgia Ready Mix Concrete Association